

BILL OF QUANTITY CUM PRICE SCHEDULE

Name of Project : 765kV/400kV AGRA UPPTCL (NEW) SUBSTATION

Name of Work : CIVIL WORKS FOR 765kV SWITCHYARD

S.No.	Description of Item	Unit	Quantity	Unit Rate(Rs)	Amount(Rs)
1	Earthwork in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30cm in depth 1.5m in width as well as 10sqm on plan) including dewatering as necessary of rain water/subsoil seepage water and disposal of excavated earth upto 100m and lift upto 3.5m, disposed earth to be levelled and neatly dressed.				
(a)	All kinds of soil.	cum	34800	129.35	4501380.00
2	Earthwork in excavation by mechanical means (Hydraulic excavator)/manual means in foundation trenches or drains (not exceeding 1.5m in width as well as 10sqm on plan) including dewatering as necessary of rain water/subsoil seepage water and dressing of sides and ramming of bottoms, lift upto 3.5m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 100m.				
(a)	All kinds of soil.	cum	8220	130.80	1075176.00
3	Filling available excavated earth (including rock) in trenches, plinth, sides of foundations, etc., in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead upto 100m and lift upto 3.5m.	cum	31200	83.80	2614560.00
4	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 3.0 m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20cm in depth including consolidating each deposited layer by ramming, watering etc. and disposing of surplus excavated soil as directed within a lead of 100m.				
(a)	All kinds of soil				
4.1	Pipes, cables etc, not exceeding 80mm dia.	meter	60	101.40	6084.00
4.2	Pipes, cables etc. exceeding 80mm dia. but not exceeding 300 mm dia.	meter	60	165.60	9936.00
4.3	Pipes, cables etc. exceeding 300mm dia but not exceeding 600mm	meter	120	258.55	31026.00
5	Carriage & disposal of surplus excavated earth/rock beyond initial lead by mechanical means not necessarily all the times on pucca roads, including loading, unloading, dressing of excavated material, etc., complete as per specifications -.				
(a)	Lead upto 1 km.	cum	7200	82.78	596016.00
(b)	Lead upto 2 km.	cum	3000	93.94	281820.00

S.No.	Description of Item	Unit	Quantity	Unit Rate(Rs)	Amount(Rs)
(c)	Lead upto 3 km.	cum	900	104.98	94482.00
(d)	Lead upto 5 km.	cum	720	125.92	90662.40
6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level.				
(a)	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size)	cum	830	4514.05	3746661.50
(b)	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size)	cum	30	3888.20	116646.00
(c)	1:4:8 (1 cement : 4 fine sand : 8 graded stone aggregate 40mm nominal size)	cum	2850	3331.25	9494062.50
7	Extra for providing and mixing water proofing material 'Impermo' or equivalent in cement concrete work in the proportion recommended by the manufacturer.	per 50 kg cement	300	35.35	10605.00
8	Providing and laying in position machine batched and machine mixed design mix M25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS:9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. (Note Cement content considered in this item is 330kg/cum. Excess/less cement used as per design mix is payable/recoverable separately)				
(a)	All works upto plinth level	cum	4620	5242.15	24218733.00
(b)	All works upto above plinth level upto floor V level	cum	1560	5781.5	9019140.00
9	Providing and laying reinforced CC pavement of design mix M25 grade with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator, vacuum dewatering process and finally finished by floating, brooming with wire brush etc. all complete as per specifications and direction of Engineer-in-charge. (The panel shuttering work and reinforcement shall be paid for separately). (Note Cement content considered in this item is 330kg/cum. Excess/less cement used as per design mix is payable/recoverable separately)	cum	1030	5761.6	5934448.00
10	Add for using extra cement in the items of design mix over and above the specified cement content therein	quintal	5940	589.80	3503412.00

S.No.	Description of Item	Unit	Quantity	Unit Rate(Rs)	Amount(Rs)
11	Centering and shuttering including strutting, propping, etc., and removal of form for:				
(a)	Foundations, footings, bases of columns, etc., for mass concrete.	sqm	4740	166.90	791106.00
(b)	RCC walls at all levels (any thickness).	sqm	10440	285.15	2976966.00
(c)	Columns, Pillars, Piers, Posts and Struts .	sqm	4080	365.60	1491648.00
12	Steel reinforcement -Cold twisted bars /TMT/HCR				
(a)	Including supply (To be procured from SAIL/RINL/TISCO/IISCO) and straightning, cutting, bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete.	kg	18000	62.25	1120500.00
(b)	Excluding supply but including transporting from SAIL stockyard to site, straightening, cutting, bending, binding, (i/c cost of binding wire), placing in position, etc., all complete as per specification and directions of Engineer-in-Charge. (Reinforcement shall be supplied by BHEL as per conditions of contract)	kg	480000	10.50	5040000.00
13	Providing & fixing in position 12mm thick bitumen impregnated fibre board conforming to IS:1838 including cost of primer, sealing compound in expansion joints	per cm depth per 100m	30	430.30	12909.00
14	Brickwork with F.P.S.bricks of class designation 75 in foundation and plinth in:				
	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	2100	3316.55	6964755.00
15	Structural steelwork welded in built up sections like edge protection angles, insert plates with lugs & framed work including providing, cutting, hoisting, fixing in position/ embedding in concrete and applying a priming coat of approved steel primer all complete.	kg	96000	66.50	6384000.00
16	Steelwork welded in built up sections/framed work including providing, cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc., as required.				
(a)	In covering of floors/trenches of control room building with chequered plates, stringers, treads, landings, etc., of staircases involving use of chequered plates, wherever required, all complete.	kg	9000	67.20	604800.00
(b)	In gratings, frames, ladders, stair railings, rails, ISMB, ISMC and similar works.	kg	6000	77.90	467400.00
17	12mm cement plaster finished with a floating coat of neat cement of mix:				
	1:6 (1cement :6 fine sand)	sqm	10800	142.42	1538136.00

S.No.	Description of Item	Unit	Quantity	Unit Rate(Rs)	Amount(Rs)
18	Applying one coat of water thinable cement primer of approved brand and manufacture on wall surface:				
	Water thinnable cement primer	sqm	810	25.50	20655.00
19	Finishing walls with water proofing cement paint of required shade:				
	New Work (Two or more coats applied @3.84kg/10sqm)	sqm	30	44.95	1348.50
20	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete.				
(a)	On steel Work	sqm	30	105.50	3165.00
(b)	On concrete Work	sqm	30	108.55	3256.50
21	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade:				
	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture.	sqm	30	78.80	2364.00
22	Breaking of pile head for 450 and 600mm dia piles manually including stacking of steel bars and disposal of unserviceable material within 50metres lead as per direction of Engineer-in-charge	cum	75	978.95	73421.25
23	Extra for scrapping, cleaning and straightening reinforcement from pile head and binding with pile cap reinforcement all complete as per direction of Engineer-in-charge	kg	6900	2.60	17940.00
24	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction, of approved size , design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarde sand , filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	sqm	1290	536.65	692278.50

S.No.	Description of Item	Unit	Quantity	Unit Rate(Rs)	Amount(Rs)
25	Providing and laying at or near ground level factory made kerb stone of grade M25 cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement : 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not be more than 5mm), including making drainage opening wherever required complete etc. all complete as per the direction of Engineer-in-charge. (Length of finished kerb edging shall be measured for payment). (Precast CC kerb stone shall be approved by Engineer-in-charge)	cum	144	5046.80	726739.20
26	Preparation and consolidation of subgrade with power road roller of 8 to 10 tonne capacity after excavating earth to an average of 22.5cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth lead upto 50m.	sqm	10312	61.25	631610.00
27	Extra for compaction of earthwork in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (Proctor density)	cum	2320	7.75	17980.00
28	Supplying and stacking of graded stone aggregate at site of size range				
(a)	90mm to 45mm	cum	1392	1010.75	1406964.00
(b)	63mm to 45mm	cum	1392	1100.80	1532313.60
(c)	53mm to 22.4 mm	cum	1392	1190.80	1657593.60
29	Laying spreading and compacting stone aggregate of specified sizes to WBM specifications including spreading in uniform thickness, hand picking, rolling with 3 wheeled road/vibratory roller 8-10tonne in stages to proper grade and camber, applying and brooming requisite type of screening/binding material to fill up interstices of coarse aggregate water and compacting to the required density (payment for stone aggregate, screenings, kankar, moorum and red bajri etc., to be made separately)	cum	3090	330.15	1020163.50
30	Supplying and stacking of stone screenings/chippings at site				
(a)	13.2 mm nominal size (Type A)	cum	420	1338.75	562275.00
(b)	11.2 mm nominal size (Type B)	cum	420	1425.85	598857.00
31	Supplying and stacking of moorum at site.	cum	300	624.45	187335.00
32	Providing and laying polythene sheet of 125 microns in road work as directed by Engineer-in-charge.	sqm	10312	74.97	773090.64

S.No.	Description of Item	Unit	Quantity	Unit Rate(Rs)	Amount(Rs)
33	Providing and laying non-pressure NP3 class (Heavy duty) RCC pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc., complete.				
(a)	100mm dia. RCC pipe	RM	60	519.80	31188.00
(a)	250mm dia. RCC pipe	RM	120	835.80	100296.00
(b)	300mm dia. RCC pipe	RM	691	906.30	626253.30
(c)	450mm dia. RCC pipe	RM	115	1587.60	182574.00
34	Grouting of block outs, pockets, foundations, bolts holes and underside of base plates with cement, sand aggregate (of size 6 mm and down) grout 1:1:2 with non-shrink additive and shall be of strength not less than M30 including placing, curing, cleaning, surface preparation, testing, etc. complete with labour, materials, equipment, handling, testing, etc. all complete as per specifications, drawings and instructions of the Engineer.				
		cum	25	17750.00	443750.00
35	Providing & fixing in position precast cement concrete trench covers, coping, roof units, fascia, RCC grills, etc., at various elevations in all kinds of work including moulding, formwork, mixing, laying out, compacting and curing, storing, transportation, erection without damage, setting in position with cement and sand mortar, grouting etc all as per specs, drawings and directions of Engr-in-Charge but excluding the cost of reinforcement, inserts, edge angles, etc, and of following grade:				
(a)	M25	cum	180	6747.30	1214514.00
36	Fixing (all dia & length) foundation bolts in position with help of proper templates(template to be supplied by contractor) including nuts and washers all complete as per specs, drawings & directions of Engr-in-Charge.(Foundation bolts shall be supplied by BHEL. The dia of bolts shall generally be upto 80mm)				
		kg	90000	9.75	877500.00
37	Providing & fixing galvanised chainlink fencing including all allied activities, all complete as per POWERGRID Technical specification clause no. 9.0, drawing (C/ENGG/CVL/SYD/FENCE/101) and direction of Engineer incharge. (Rates shall be inclusive of all labour material items like galvanised chainlink fence fabric, galvanised tubular post, flats, PCC(1:4:8), CC (1:2:4), plaster, brickwork, cement painting, etc.all complete)				
		RM	1440	2430.00	3499200.00

S.No.	Description of Item	Unit	Quantity	Unit Rate(Rs)	Amount(Rs)
38	Providing & fixing gate made of medium duty MS pipe including all allied activities, all complete as per POWERGRID Technical specification clause no. 9.0, drawing (C/ENGG/CVL/SYD/GATE/002) and direction of Engineer incharge. (Rates shall be inclusive of all labour material items like medium duty pipe, fabrication, welding etc.all complete)	kg	1200	77.90	93480.00
39	Providing and laying 600mm wide 75mm thk PCC 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size) shoulder over well compacted earth on both side of road all complete as per drawing, specification and direction of Engineer-in-charge (Rate shall be inclusive of material, well compacted earth, labour, T & P etc.)	sqm	1920	269.50	517440.00
40	Supplying and erection of dewatering pumps at desired location as per specification and direction of Engineer-in-charge (Rate shall be inclusive of all material like pump,piping, electricity connection, T & P etc.all complete)				
(a)	5HP	Each	1	40000.00	40000.00
(b)	0.5HP	Each	1	16200.00	16200.00
41	Rain water harvesting - Providing recharge structures with bore wells all complete as per POWERGRID's specification clause no. 6.0, drawing (C/ENGG/STD/RWH-01) and direction of Engineer-in-charge	Each	1	153000.00	153000.00
				Total:	110461816

NOTE:

- Reinforcement steel shall be supplied by BHEL free of cost as per norms indicated in conditions of contract. The rate quoted against **Item no.: 12(b)** above shall be deemed to be inclusive of cost against all activities required including transportation of material from SAIL stockyard to site.